

ABSTRACT

A variable geometry turbocharger comprises a turbine wheel (20) mounted within a turbine housing (23) on one end of a turbocharger shaft (22) for rotation about a turbocharger axis. The turbine housing (23) defines an annular turbine inlet (36) around the turbine wheel (20). A compressor wheel (21) is mounted within a compressor housing (24) on the other end of the turbocharger shaft (22). Turbocharger shaft bearing assemblies (26, 27) are located within a bearing housing (25) connected between the turbine housing (23) and the compressor housing (24). A variable geometry mechanism (35) is provided for varying the size of the annular turbine inlet (36). The variable geometry mechanism is actuated by a tubular linear electric motor comprising a fixed annular stator ring (31a, 46, 48) and an axially moveable annular forcer ring (44), arranged coaxially about the turbocharger axis.